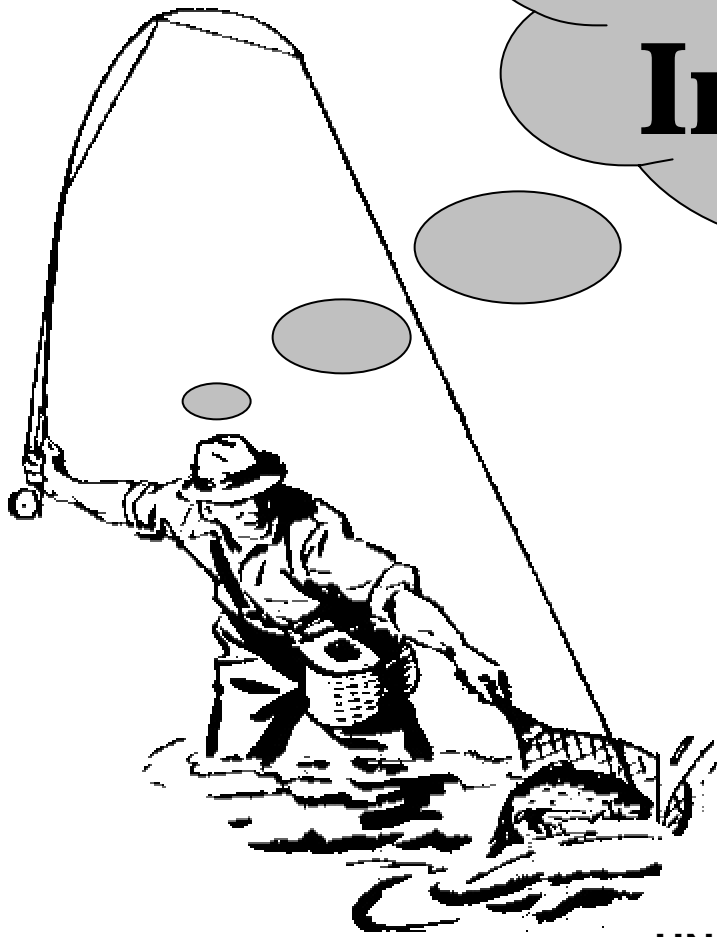


Some Thoughts on Interoperability



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Interoperability

It has been with us for a long time
but ...

it really became the “center of attention”
with the EISENHOWER Battle Group
in the Spring of ‘98

**NETWORK CENTRIC WARFARE HAS ARRIVED
THE ENGINEERING BAR HAS BEEN RAISED**

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Interoperability

A commonly used term

but ...

context really matters

- Interoperability among communications links to facilitate exchange of data / information
- Interoperability among combat systems and JDN / JCTN data links to facilitate tracking and engagement of targets and to put ordnance on target

**COMMON FEATURES BUT DIFFERENT
REQUIREMENTS**

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Interoperability

Some say ... it is a technical objective

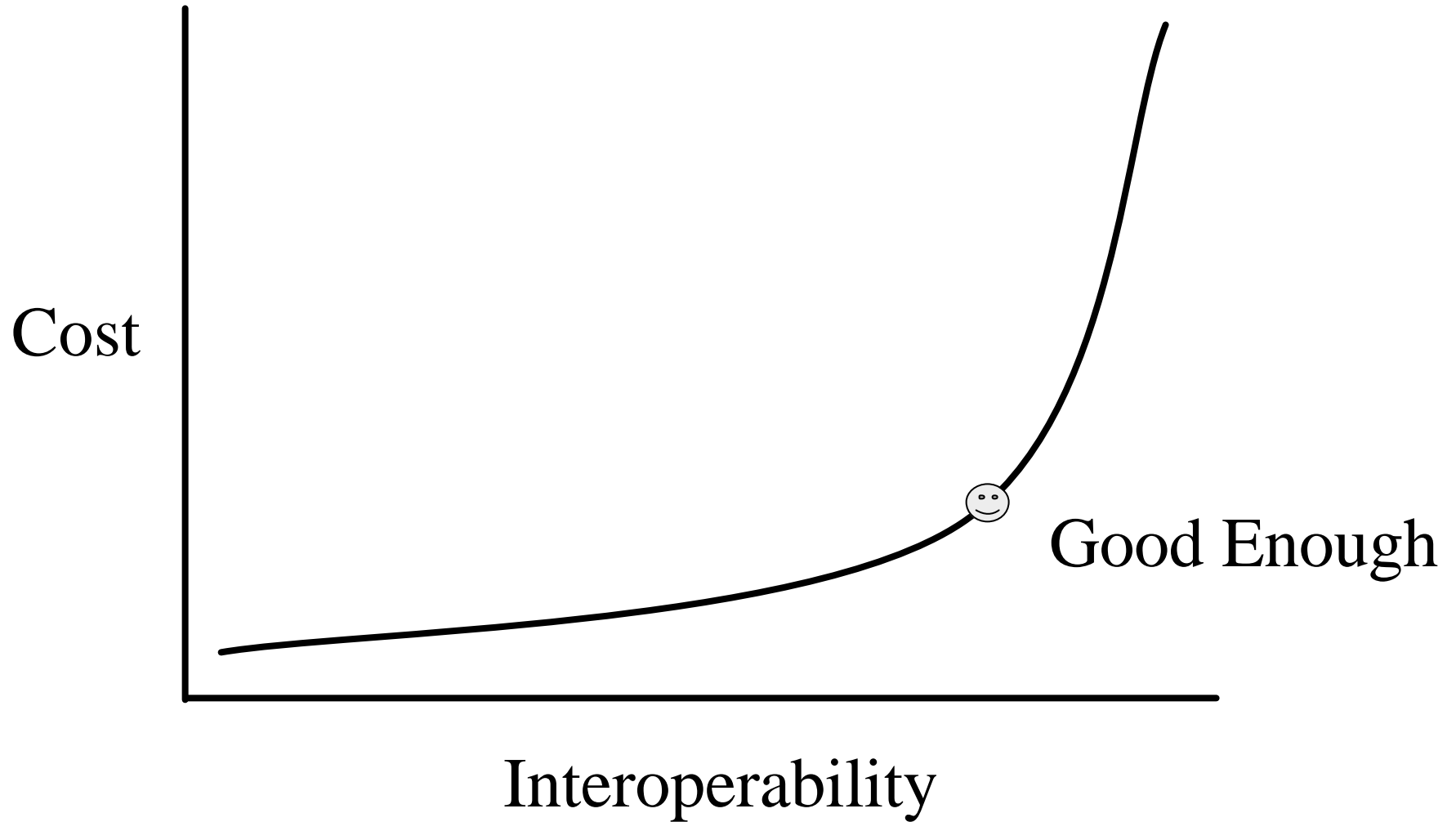
Others say ... it is a programmatic focus

Warfighters say ... it is an operational requirement
in the 21st Century

**IT MUST BE MEASURED AT THE
TIP OF THE SPEAR
AND ...
IT MUST BE “GOOD ENOUGH”**

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Interoperability



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Interoperability

Measured at the “Tip of the Spear” requires ...

- Large joint networked forces with a precise mix of platforms, system suites, software versions, etc.
- An environment where analysis, testing and evaluation can be conducted in a repeatable disciplined way.
- A single consolidated engineering effort directed at uniformly recognized and accepted engineering standards and objectives
- Action by all parties to programmatically implement necessary changes

THERE ARE NO SHORTCUTS

**OPERATIONAL FORCES SIMPLY CANNOT
MEET THE NEED**

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SIAP ENGINEER

- Addresses CS / JDN / JCTN Interoperability
- Must focus on warfighter priorities
- Must address a “Joint / Coalition” solution
 - Joint sensor netting / data links
 - Coalition access to data links
- Must be supported by all services

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Joint Distributed Engineering Plant

- It (or something like it) must be used for Engineering / Testing in lieu of operating forces
 - Must interface with operational units
 - Must receive priority enhancement
 - Must be fully supported and employed

**NETWORK CENTRIC ENGINEERING AND T&E
FOR A
NETWORK CENTRIC FORCE**

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One Battle Group Commander's Opinion

Despite our best efforts, we will not achieve interoperability to support the warfighter's needs unless:

- We change how we **program & budget** for networked and COTS-based systems

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Planning, Programming & Execution

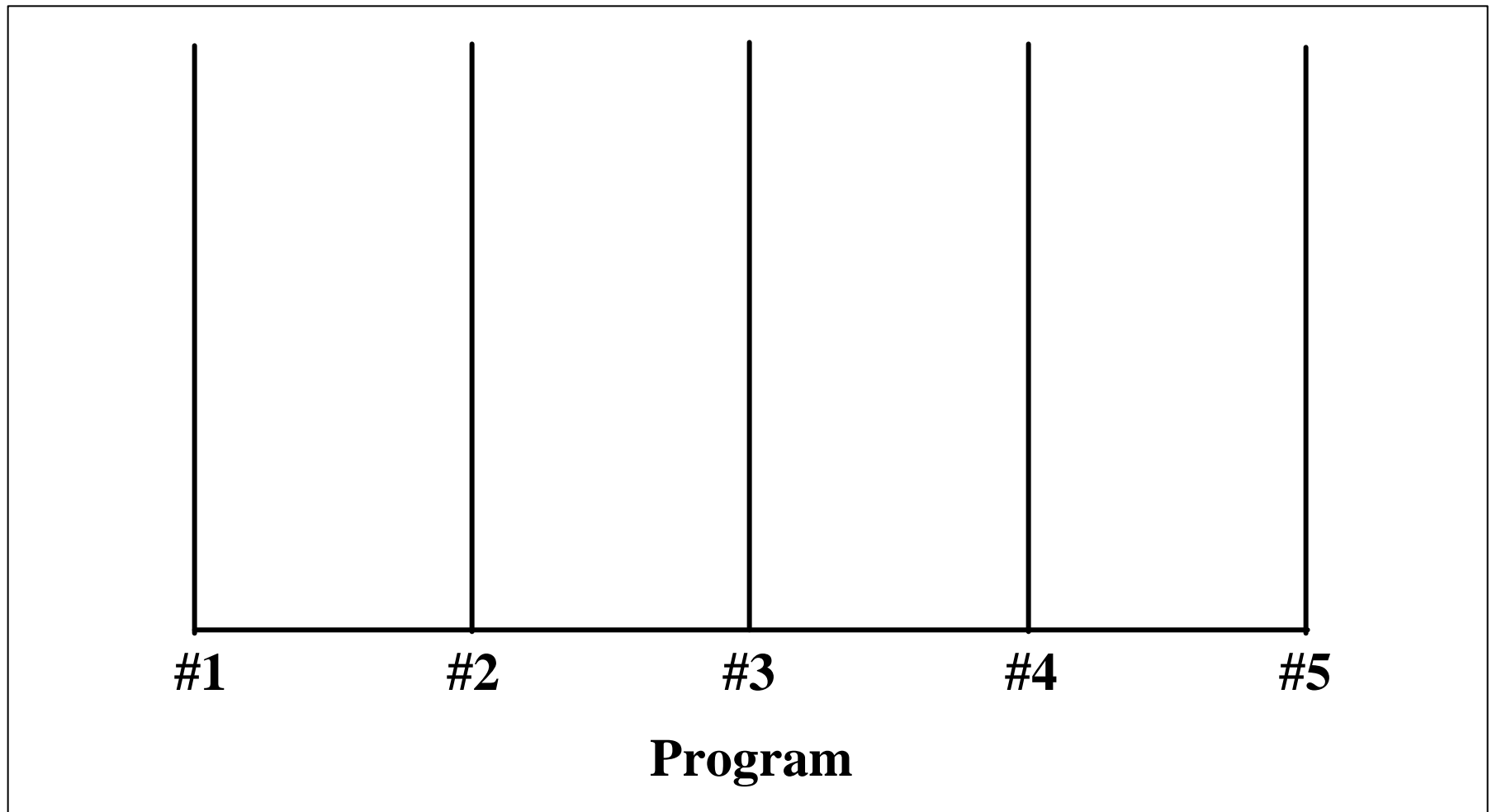
OBJECTIVE:

- **END-TO-END CAPABILITY**

Achievement dependant on coordinated execution of multiple programs

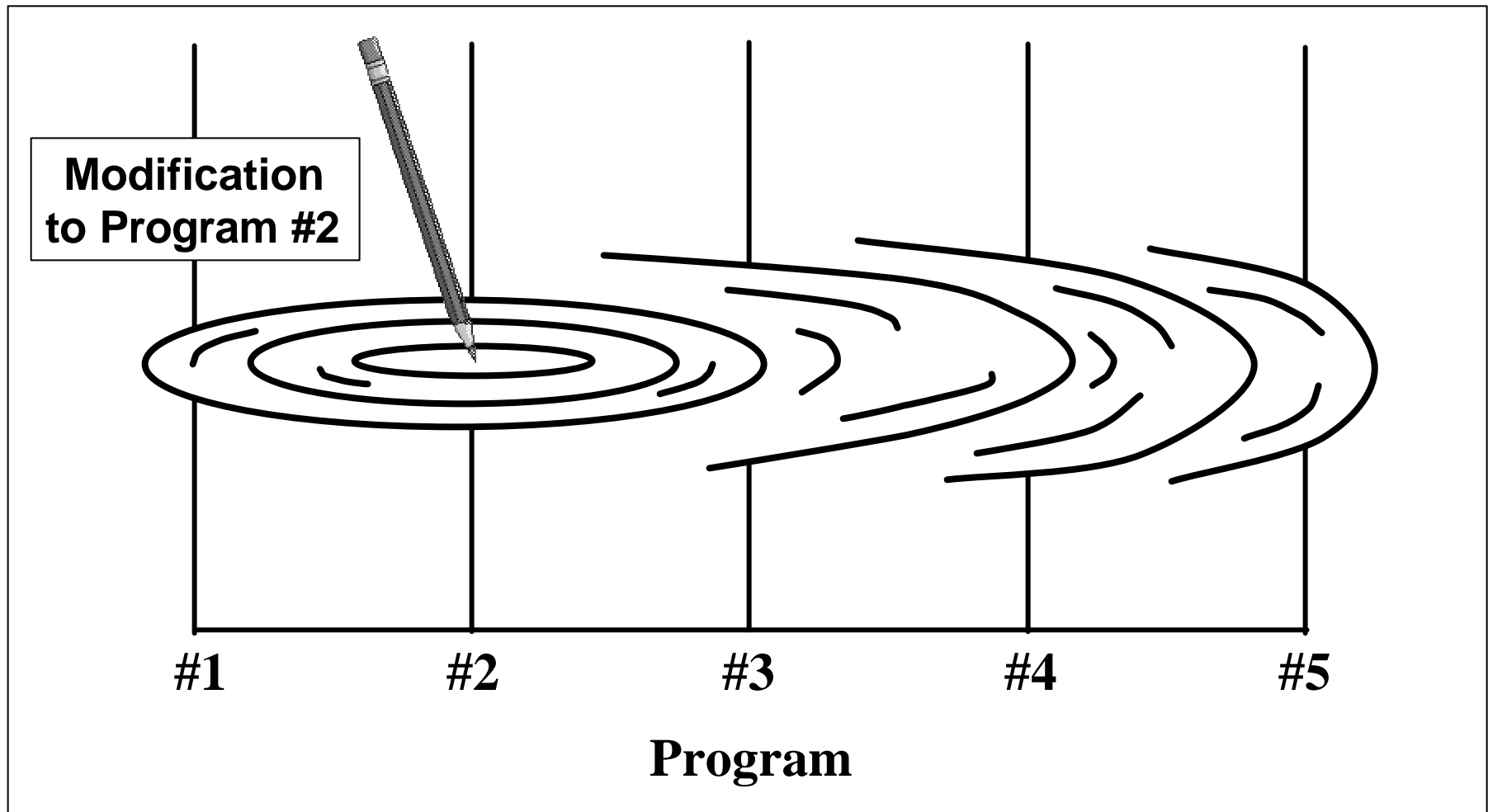
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Planning, Programming & Execution



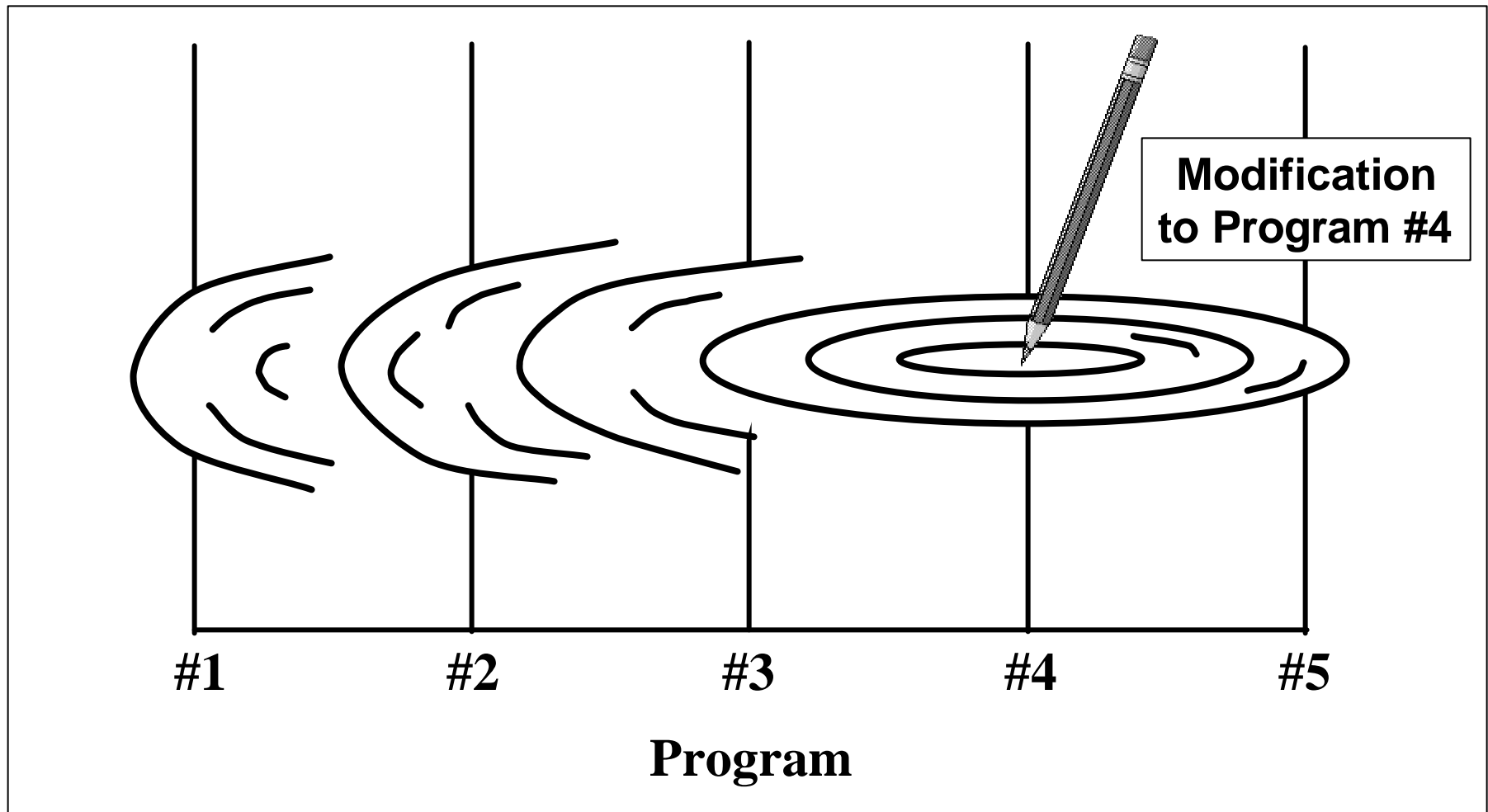
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Planning, Programming & Execution



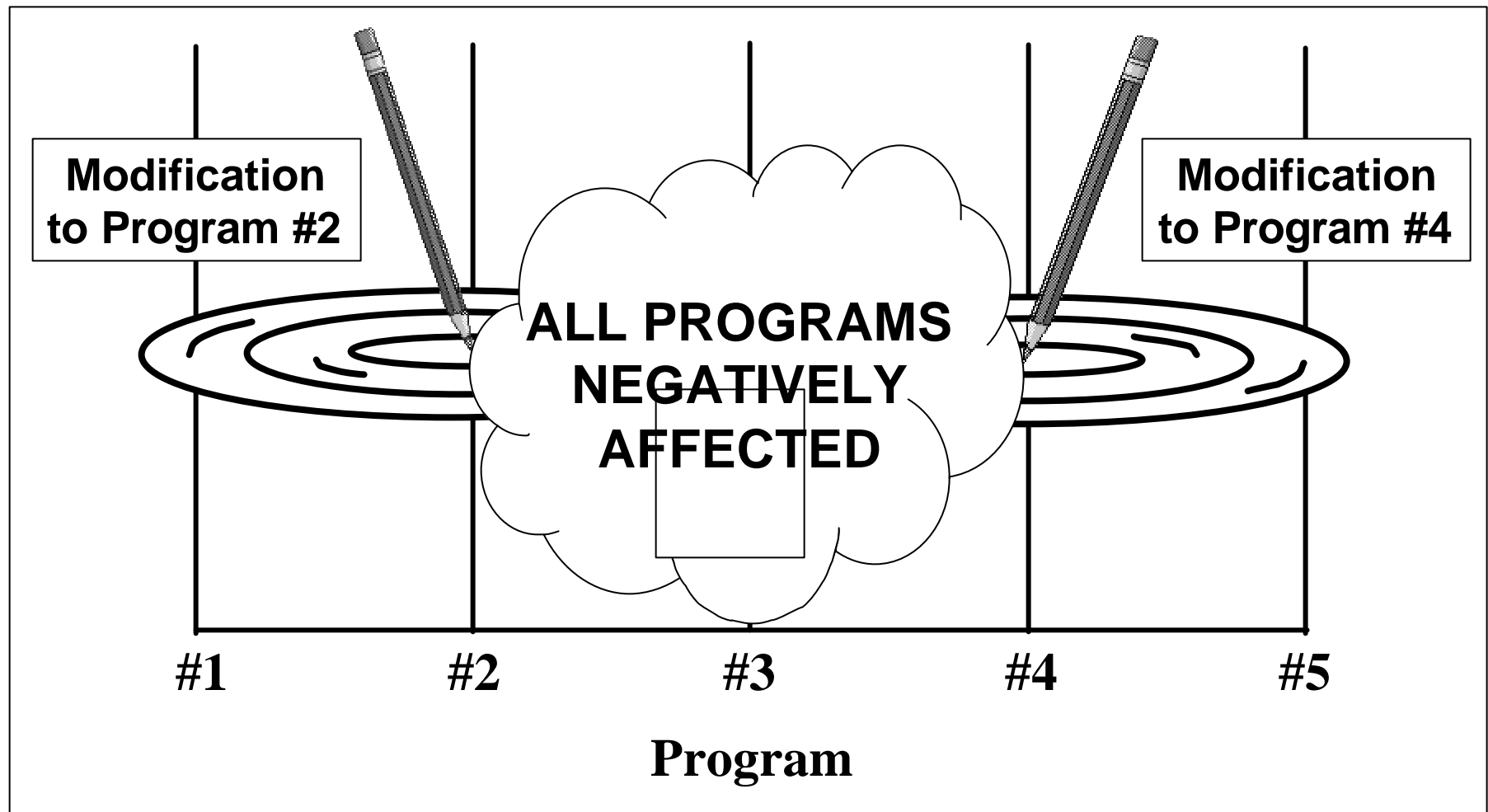
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Planning, Programming & Execution

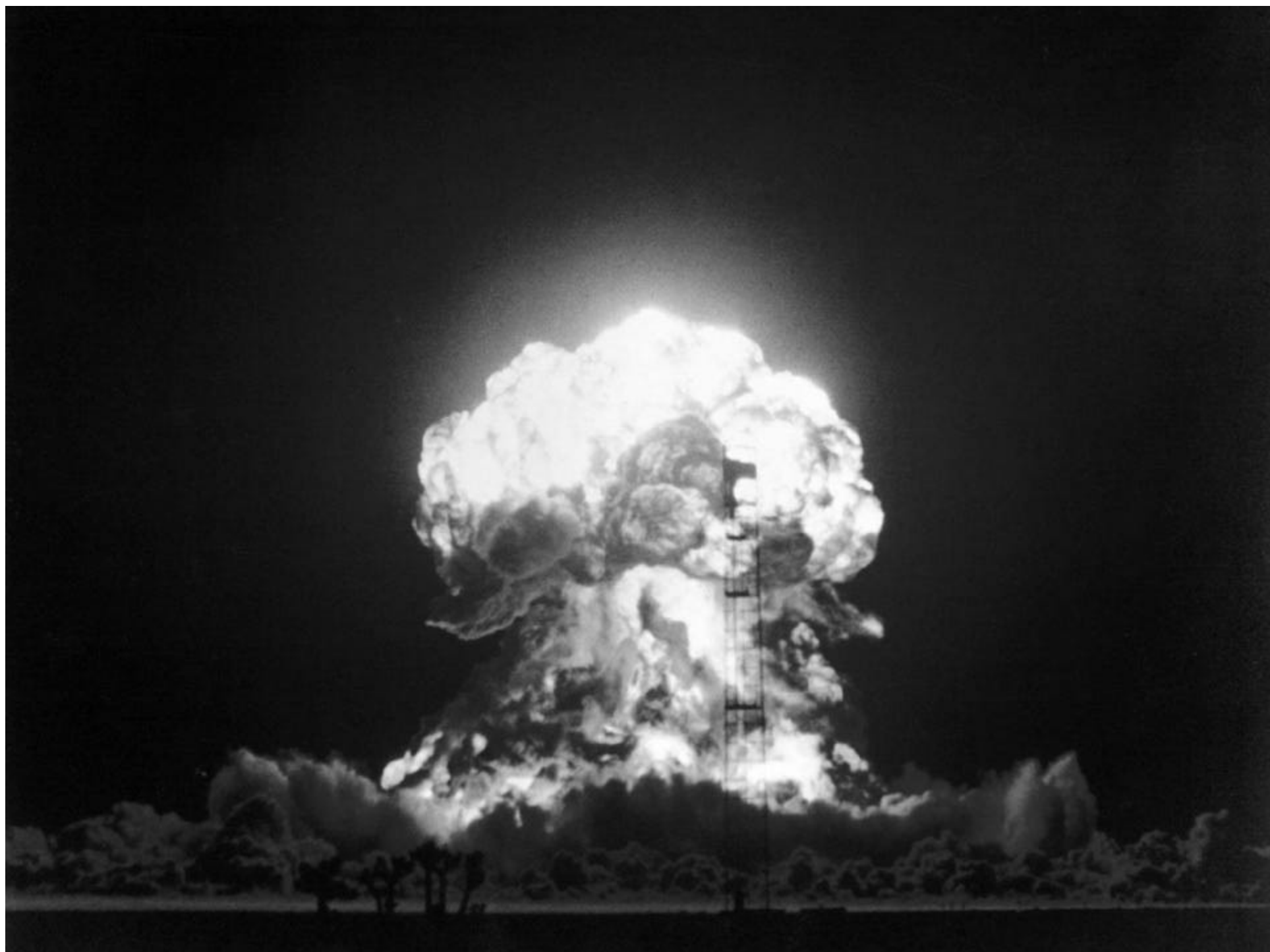


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Planning, Programming & Execution



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One Battle Group Commander's Opinion

Despite our best efforts, we will not achieve interoperability to support the warfighter's needs unless:

- We change how we **program & budget** for networked and COTS-based systems
- We change how we **acquire & deploy** networked and COTS-based systems

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Change how we acquire & deploy networked and COTS-based systems

- Expedite transition from rapid prototype to force wide deployment
- Minimize OPEVAL operational loading (DEP/JDEP potential key)
- Fully employ D-30 schedule to meet “warfighter” needs
- Build “networks” ... not connected systems
 - Minimize overlapping and duplication of functions

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One Battle Group Commander's Opinion

Despite our best efforts, we will not achieve interoperability to support the warfighter's needs unless:

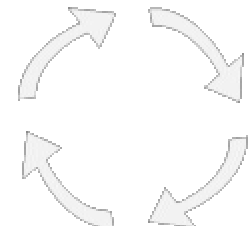
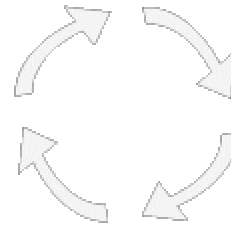
- We change how we **program & budget** for networked and COTS-based systems
- We change how we **acquire & deploy** networked and COTS-based systems
- We focus functionality at the optimum place in the network

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A Warfighter's Request

- **Command and Control**

- **Communication**
- **Display**
- **Processing**
- **Planning**
- **Wargaming**



- **Combat Systems**

- **Sensor Netting**
- **Data Link Interoperable**
- **Ordnance on Target**

